1-2014

M 151.00: Precalculus

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M 151 (Precalculus) **Spring 2014** **Course Coordinator**: Regina Souza

Instructor	Sections	MTWF	Room	Office	Phone	Email
Palmer	1	10 am	MA 312	Cor 366	243-4486	Cody.Palmer@umontana.edu
Lane	2	11 am	MA 103	Math 005	243-5207	Dick.Lane@umontana.edu
Chih	3	12pm	MA 305	Cor 256	243-2383	Tien.Chih@umontana.edu

Math Learning Center (MLC): Room Math 011 (basement); Mon–Thurs: 10–3pm, Friday: 10am-noon
Starting Feb. 3rd, also at the Mansfield Library Main Floor; Mon–Thurs, 6:30–9pm
More information at http://www.umt.edu/math/MLC/ .
Office Hours (for all instructors): TBA (see http://www.math.umt.edu/souza/oh.pdf)
Office Hours for Dr. Souza (Coordinator): Mo: 3:10-4pm, Tu: 11:10-12pm, We: 1:10-2pm,
Fri: 9:10-10pm, or by appointment.
Contact information for Dr. Souza: Room MA 104, 243-2166, Regina.Souza@umontana.edu

Text: College Algebra, Trigonometry and Precalculus, UM Custom (2nd ed.), Connally, Hughes-Hallett, et al. (available at the bookstore), or the 4th edition of Functions Modeling Change, Connally, Hughes-Hallet, et al. You may also choose to purchase an e-book: www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP001848.html You do not need the access code for WileyPLUS; you can buy a used book.

Graphing Calculator: A graphing calculator is required. Class demos will be given with a TI-83 or TI-84.

Course Description: (adapted from http://www.umt.edu/catalog/cat/cas/math.html)

M 151 Precalculus 4 cr. Offered autumn and spring. Prerequisites: appropriate placement score. A one semester preparation for calculus as an alternative to M 121-122 (MATH 111–112). Functions of one real variable are introduced in general and then applied to the usual elementary functions, namely polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, and miscellaneous others. Inverse functions, polar coordinates and trigonometric identities are included. Credit not allowed for both M 151 (MATH 121, MAT 120) and M 121 or 122 (MATH 111 or 112, MAT 118 or 119).

Learning Goals: Upon completion of this course, a student will be able to:

1. Manipulate polynomial, rational, power, exponential, logarithmic and trigonometric functions.
2. Graph polynomial, rational, power, exponential, logarithmic and trigonometric functions.
3. Define trigonometric ratios using right triangles, coordinate systems and the unit circle.
4. Find and apply inverse functions for selected polynomial, rational, power, exponential, logarithmic and trigonometric functions of a real variable.
5. Use polynomial, rational, radical, exponential, logarithmic and trigonometric functions of a real variable to model real-world phenomena and solve applied problems.

Course Content:

1. Graphs, Functions, Applications (Function Notation, Linear Functions, Equations of Lines, Applications, Solving Linear Inequalities, Increasing, Decreasing, and Piecewise Functions, Algebra of Functions, Composition of Functions, Symmetry and Transformations; Family of Quadratic Functions)
2. Exponential and Logarithmic Functions (Inverse Functions, Exponential and Logarithmic Functions and their Graphs, Exponential and Logarithmic Equations, Applications)
3. Trigonometric Functions (Trigonometric Functions and their inverses, Applications, Arc Length, Graphs, Identities (Sum, Co-function, Double-Angle), Trigonometric Equations, Polar Coordinates)
4. Polynomial and Rational Functions (Short-run Behavior, Graphs, Comparing Power, Exponential and Logarithmic Functions, Fitting Exponentials and Polynomials to Data, Applications.)

Grading and Policies

Grading: Your course grade will be based on 4 exams, a final exam and other activities:

Four midterm tests (100 points each; 2/14, 03/07, 03/28, 04/25)	400 points (50%)
Other activities (homework, quizzes, worksheets, etc…)	200 points (25%)
Cumulative Final Exam (all sections on Tue, May 13, 6-8pm)	200 points (25%)

≥ 93%	≥ 90%	≥ 87%	≥ 83%	≥ 80%	≥ 75%	≥ 70%	≥ 65%	≥ 62%	≥ 58%	≥ 55%	< 55%
A	A–	B+	B	B–	C+	C	C–	D+	D	D–	F

M151 must be completed **with a C- or better** to fulfill the math literacy requirement. Taking M151 with the Credit/NoCredit option will not fulfill the requirement.

Information you might find useful:

Prerequisites: Aleks placement level 4 or consent of instructor.

In-class activities: In my experience, regular attendance and engaged participation is essential to successfully complete this course.

"Doing math": One of the best ways to learn mathematics is to do mathematics. We will provide opportunity both in class and outside class for that. Each class will have both written and online homework assignments (using WeBWorK: http://lennes.math.umt.edu/webwork2/). Expect at least 2 hours of work outside class every day. Study groups or a study partner work well for many students.

Reading the text: Here are some strategies: reading the authors' introductory remarks to get a feel for the material, redo examples on your own and comparing your solution with the authors' approach, reading the ``Summary'' or the ``Check Your Understanding'' problems at the end of each chapter, or creating your own summary and review.

One-on-one interaction: Besides making appointments with your instructor, and using the tutoring center Math@Mansfield, you may also meet some of your classmates at the Math Learning Center (MLC) in the basement of the Math building (MATH 011). For some of us this is the most effective (and most fun) way to learn math.

Web Pages: http://www.math.umt.edu/souza/M151 (a link can be found in the Math Department's webpage).

Miscellaneous policies and information:

Disabilities: Students with disabilities are welcome to discuss accommodations with me. More information can be found at the website of the Disabilities Services for Students (DSS): http:/life.umt.edu/dss/. Disability Services now requires one week's notice for scheduling exams.

Make-ups: Exam make-ups will be given only under special circumstances (illness, UM-sponsored travel, family emergency, etc.) Please make arrangements as soon as you know you will miss an exam. Early finals (Monday, May 12 or earlier on Tuesday, May 13) will be given only under exceptional circumstances; and need the approval of the course coordinator.

Academic Policies: Petitions to drop between April 8 and May 9 must be approved by the Dean of the student's major. Incompletes may be given only if a student has been in attendance and doing passing work up to 3 weeks before the end of the semester. Acceptable reasons for late drops and incompletes are listed in the 2013/2014 student catalog: http://www.umt.edu/catalog/acad/acadpolicy

Misconduct: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

Student Conduct Code: All students need to be familiar with the Student Conduct Code. You can find it in the "S" section of the "A to Z Index" on the UM home page (http://umt.edu).